

Flight Scientist Report
Wednesday 01/26/2022 ACTIVATE RF111

Flight Type: Statistical Survey Flight
Flight Route: KLFI ATLIC CROAK SHOKER CROAK ATLIC KLFI
Special Notes: First of two flights on this day.

King Air

Pilot report (Coldsnow):

Flight flown as briefed. King Air takeoff delayed due to remote tower operations. King Air was outside the 10 minute window of the Falcon until halfway between ATLIC and CROAK. Rest of the flight was synchronized until the King Air was 45 NM from ATLIC. Falcon did one 3min 360 to help with synchronization on the way back. Winds at altitude were out of the SW at 100-115 Knots. Four dropsonds were released. All data collection from sonds were nominal.

Flight scientist report (Shingler):

KLFI ATLIC CROAK SHOKR CROAK ATLIC KLFI

Issues taking off in sequence today due to comms issues between B200 and tower resulting in an approximately 15 min separation at start of flight.

On the climb out to CROAK and the leg out to SHOKR there was a second stratified mid layer about 1kft thick varying between 7-9kft above a lower shallow cu deck with tops around 4-5KFT. Separation distance reduced to less than 10 min by CROAK on outbound leg. Mid layer gone about halfway on the leg to SHOKR. lower deck CTHs still 4-5kft. Just past half way point CROAK/SHOKR there was a very thin aerosol layer above the lower cloud deck, only a few hundred feet thick with ASR values up to 0.7. Low level CTHs much more variable on the return trip with tops ranging between 4-5.5 kft quickly (periodicity ~1min). Latter half of the return trip there is a bit of very thin cirrus well above aircraft altitude. Mid level deck dissipated about 10 minutes prior to reaching CROAK on the return. Mid layer returned near halfway back W387. Thin cirrus at flight altitude passing OUTES. Descending to FL240 to ATLIC to avoid cirrus.

4 Sondes dropped

CROAK

SHOKR

1/2 SHOKR/CROAK

ATLIC

140337 camera time, hu25 in fov at surface note camera is 10s faster than gps

142750 camera time, hu25 in fov beak-to-beak
1440 ish... Hu25 overtook B200, maybe
152545 good view of falcon at ACT leg.

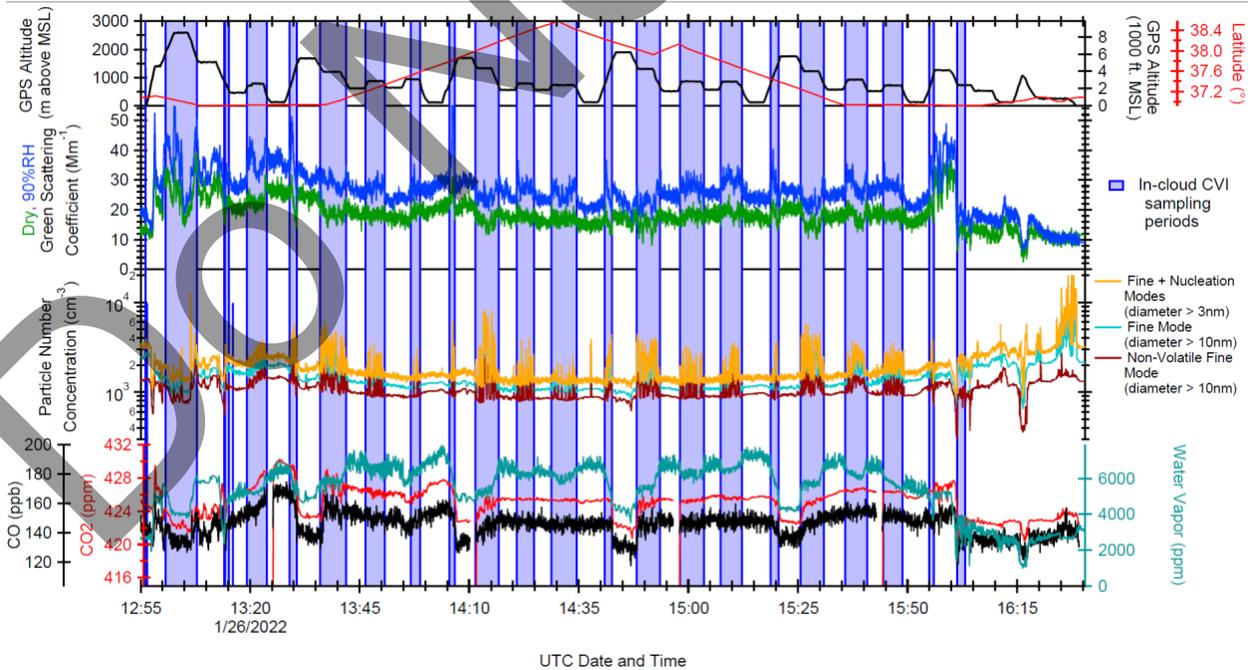
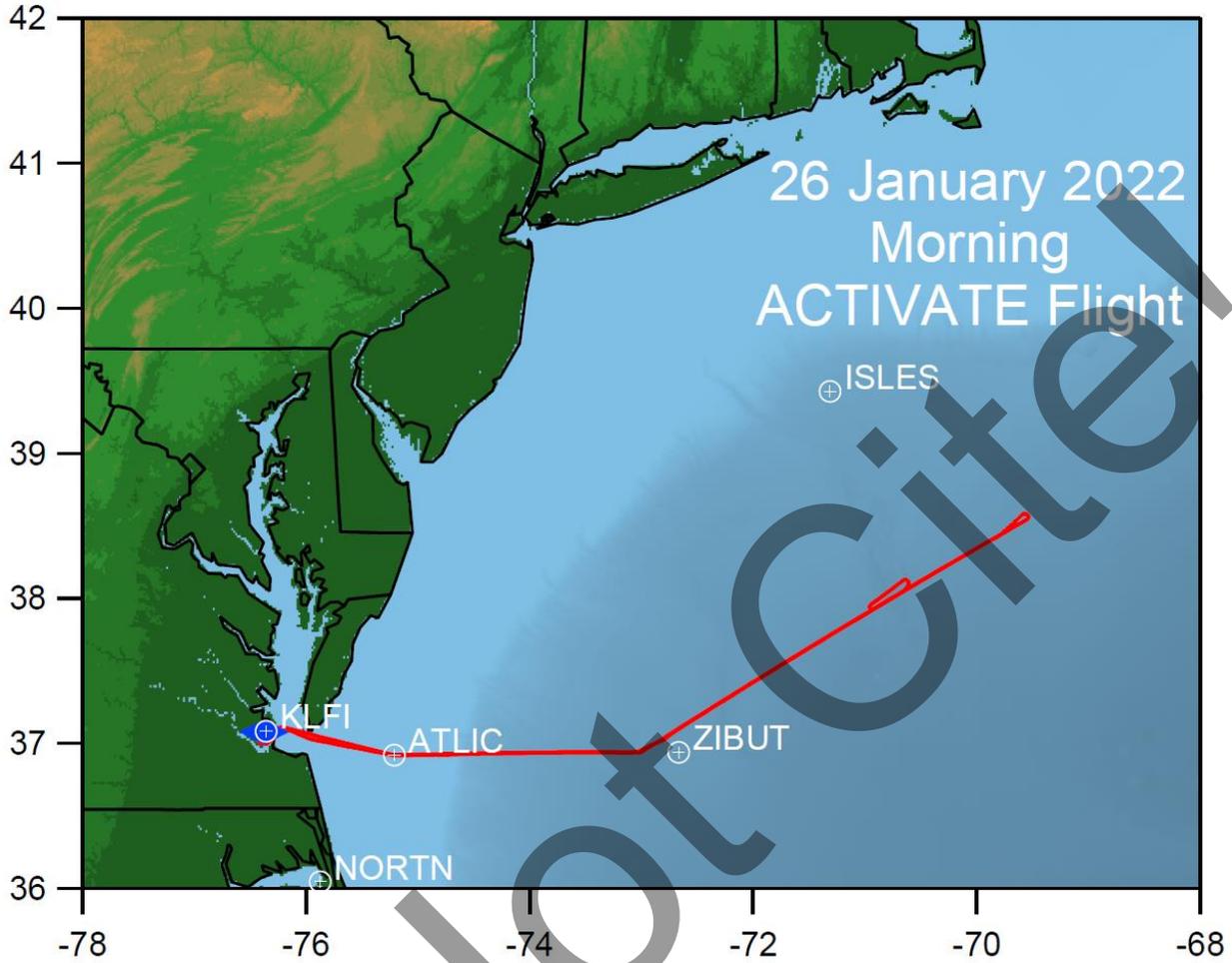
Falcon

Pilot report (Slover):

Flight flown from KLF I AT LIC CROAK SHOKER CROAK AT LIC KLF I with one 3-min data leg reversal between SHOKR and CROAK on the return leg. Good statistical survey with tops of clouds about 5500' MSL and bottoms about 2000' MSL.

Flight scientist report (Crosbie):

Stat survey ZIBUT-NE. Mid cloud was observed for a significant part of this flight. At the beginning of the flight there was no low MBL cloud so we sampled the mid cloud layer. A significant enhancement in aerosol (ORG) was observed in the vicinity of the mid-cloud layer and later extended to what became the tops of the MBL clouds. The lower MBL clouds started developing quickly with distance offshore. Thereafter these remained the focus of the sampling. The low clouds filled in rapidly into an overcast stratiform but there were breaks that took on a more cumulus appearance after CROAK/ZIBUT. There was some evidence of a moisture gradient differentiating the cloudy layer from the sub cloud layer suggesting that the mixing was only weakly coupling the cloud to the sub cloud environment. Directional shear in the wind was observed above the cloud and appeared to be advecting the mid-cloud layer and the associated enhanced ORG aerosol layer. 5 full cloudy modules were achieved.



Do Not Cite!

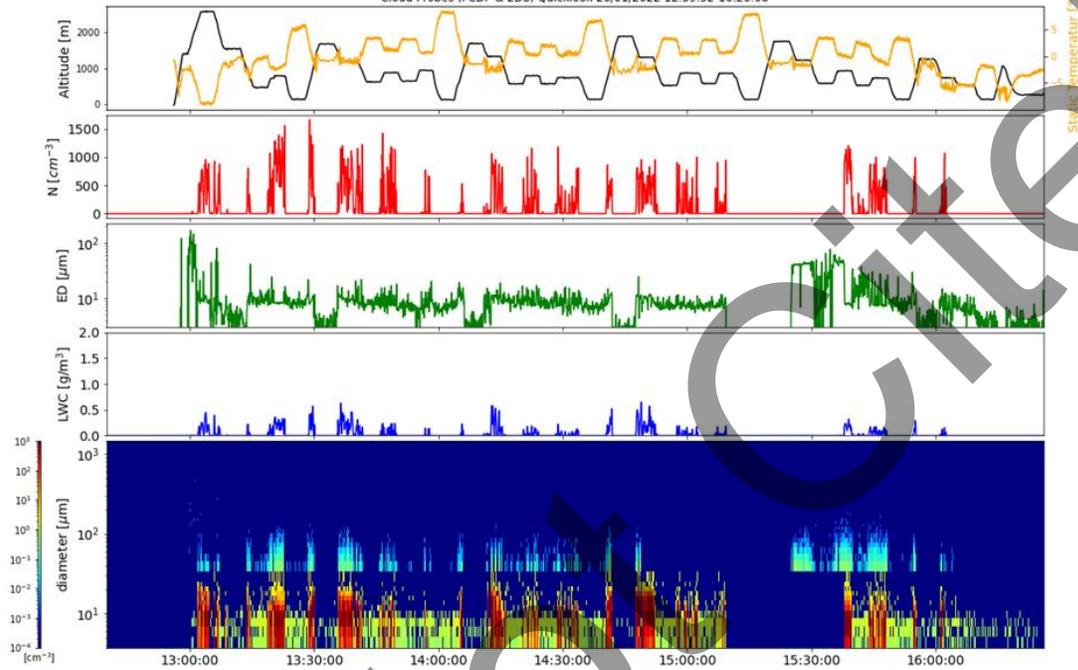
Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



Cloud Probes (FCDP & 2DS) Quicklook 26/01/2022 12:39:52-16:26:08



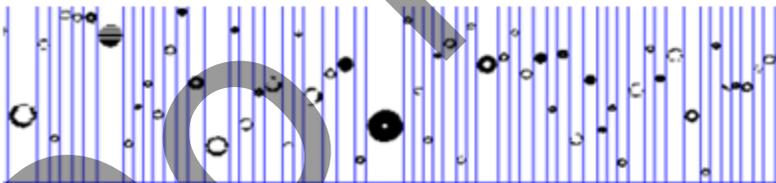
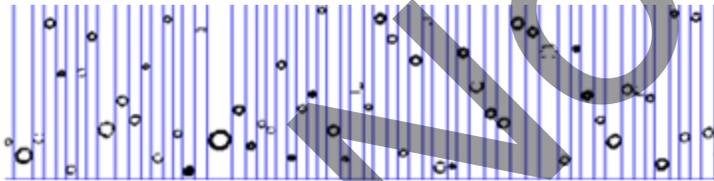
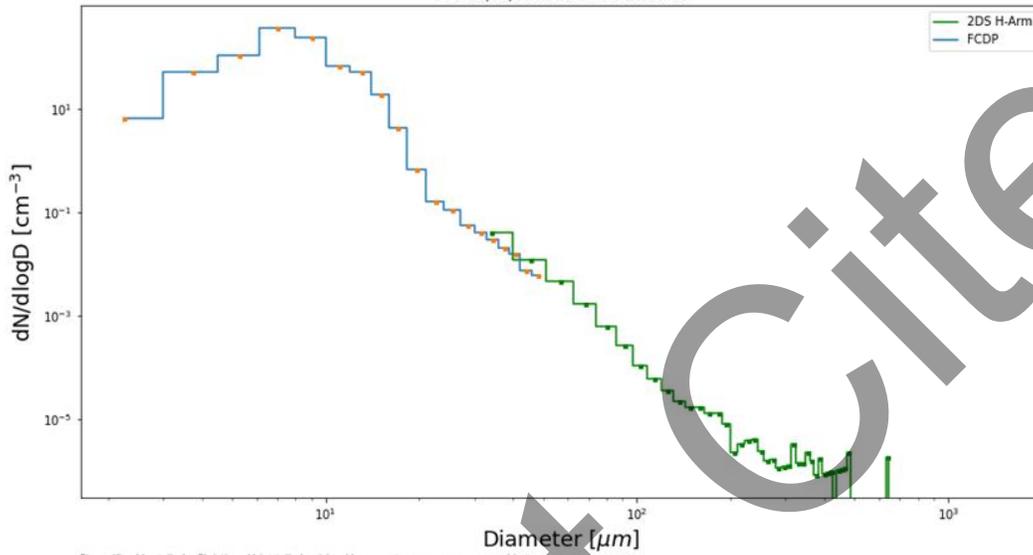
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PSD ACTIVATE

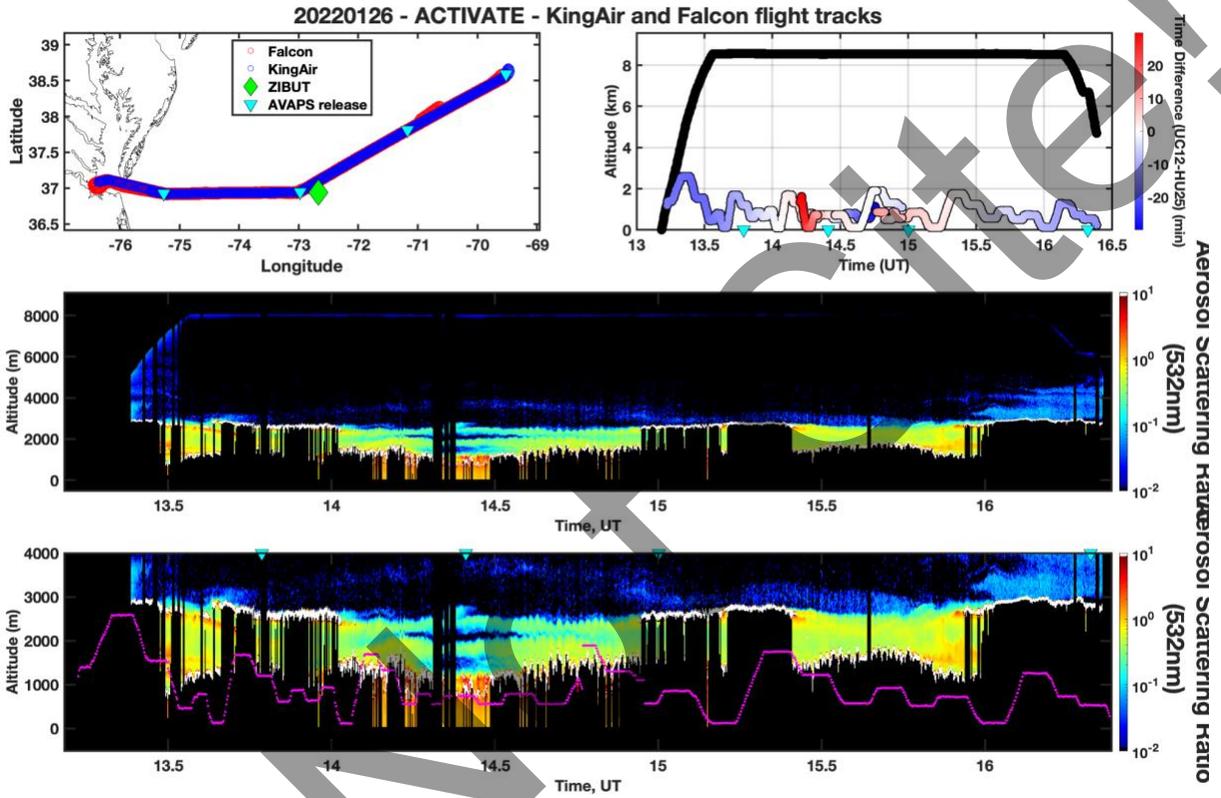
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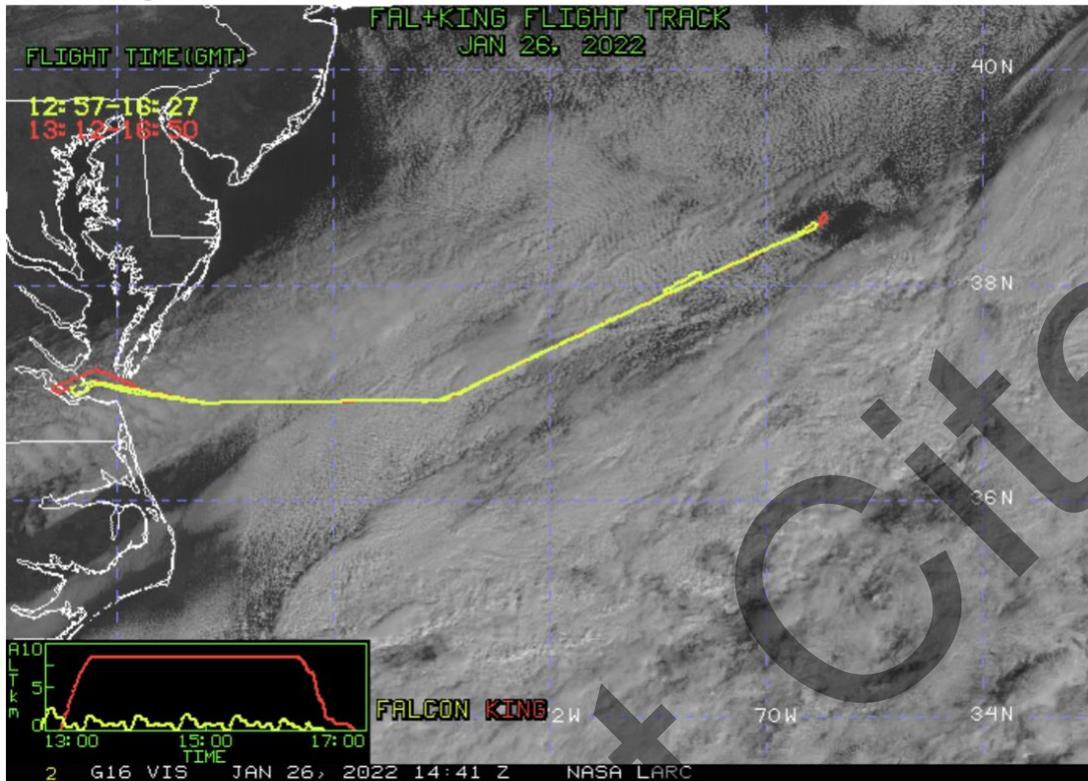


Only Pure liquid drizzle clouds without Precip.



NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 111, 14:41 UTC Jan 26, 2022

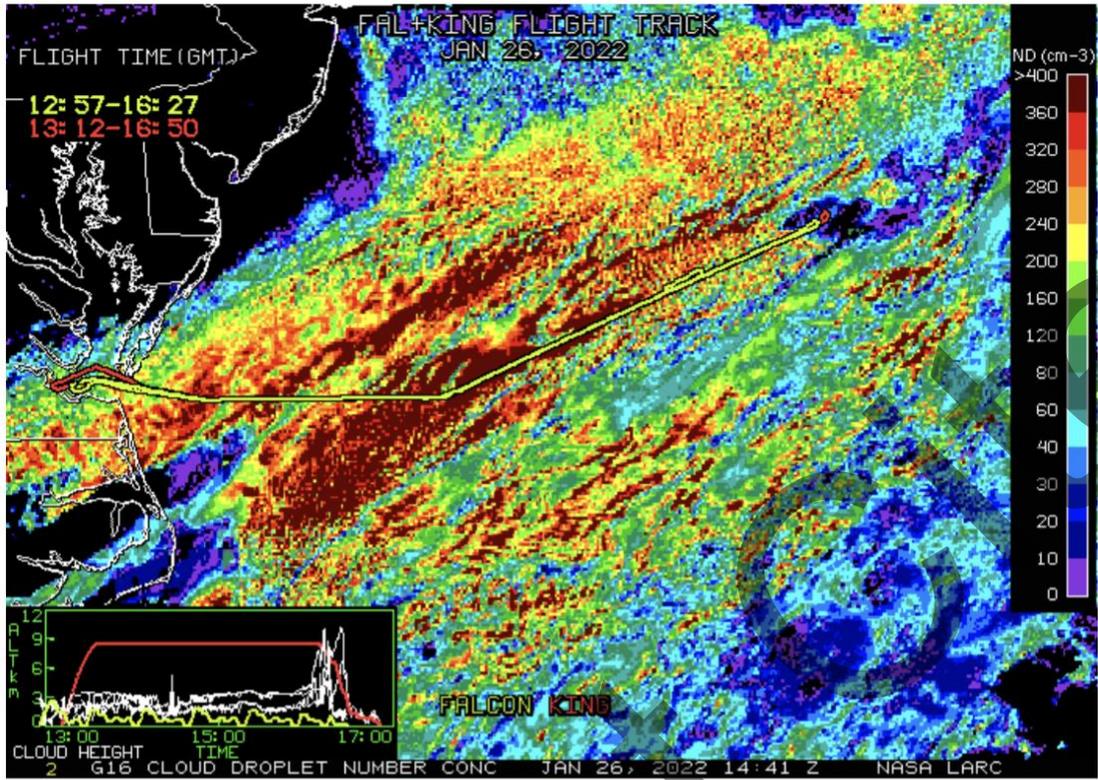
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm⁻³)



Cloud-Top Height (Kft-ASL)

